



DRYDOCK NO. 2

GENERAL HISTORY

Drydock No. 2 was built in 1901-1903 by the San Francisco Dock Company. The pumping plant was used to pump out not only Dock No. 2 but also the old Dock No. 1. After Drydock No. 3 was constructed out of old Dock No. 1, the pumping plant was used only for Dock No. 2. The first ship docked was the Battleship OHIO. The entire cost of the dock was \$357,000 including the pumping plant, caisson, graving dock, air compressors, etc. The Navy took over the dock on 15 December 1941. In 1952, the entire drydock floor, which was of timber construction, was replaced with a reinforced concrete floor. Also, the stairways were replaced and salt water, compressed air and chemical service lines were provided the full length on both sides near the bottom of the drydock. The cost for this item of rehabilitation was \$338,000. The complete history on design and engineering features of the Drydock is written up in "Engineering News" dated 25 October 1900.

PUMPING EQUIPMENT AND OPERATION

Before electrification, the pumping plant was powered by six Babcock and Wilcox oil fired boilers driving three 400 H.P. Corliss steam engines. When the age of the boilers became excessive, it was decided to install electric drive. Power is transmitted to the pumps by means of an endless rope drive. This rope was especially made for power transmission and contains a graphite center. The originals were installed in 1901 and were finally replaced between 1940 and 1950. The original pumping equipment consisted of three 400 H.P., 50,000 GPM, W. T. Garrett and Company, twin suction, centrifugal pumps. The metal of these pumps deteriorated, due to graphitization, and they were replaced with three new units of identical design. The new pumps were made by the Navy Yard's shops. Drainage is provided by two 1000 GPM Worthington centrifugal pumps. All motors utilize 480 volt power supply.

Due to design of the main pumps, the water must be at least eighteen inches over the keel blocks in order to gain suction. The two drain pumps have a common suction and as such only one of the units can be operated at a time. The main pump controls are manually operated from the master control panel in pumphouse No. 2. The two drain pumps can be either manually or automatically controlled from the drain pump control panel in pumphouse No. 2. The dock can be flooded without a ship in dock in about one hour and twenty minutes. A straight pumdown utilizing all three main pumps can be accomplished in two and one-half hours.

Sewerage is disposed of by air ejectors.

CAISSON

The original caisson was built by the Union Iron Works, San Francisco. The caisson, due to deterioration, was replaced with a new caisson in 1952. It was built by the Pacific Coast Engineering Company, Alameda, California. Mechanical equipment on the present caisson includes two 20 H.P. capstans, eight 30 inch flooding valves (for the drydock), two 12 inch flooding valves (for the main tank) and two 6 inch flooding valves (one for each trimming tank). The capstans and valves are all electrically operated. The caisson flooding tanks are divided into three compartments consisting of a single main flooding tank and two trimming tanks. The unwatering of all three tanks is done pneumatically. Under normal conditions, air is obtained from the Yard's compressed air system, however, the caisson has an auxiliary air compressor for emergency service. Displacement at maximum draft is approximately 1,100 tons. The caisson requires about twenty minutes to be unwatered and about the same time for seating.

Not more than 17'-6" of water should be left in the dock for any length of time as the caisson will not seal properly and the dock will fill to tide level.

GENERAL DIMENSIONS

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|---|-----------|
| Length..... | 750' - 0" |
| Width at Coping..... | 122' - 0" |
| Width of Entrance at Coping..... | 103' - 0" |
| Depth over Keel at Mean High Water..... | 26' - 6" |
| Depth over Keel at Mean Low Water..... | 20' - 6" |

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|-----------------|---------------------|-------------------------|----------|
| SYMBOL | DESCRIPTION | DATE | APPROVAL |
| REVISIONS | | | |
| PWO DRAWING NO. | DEPT. OF THE NAVY | BUREAU OF YARDS & DOCKS | |
| 16020-154 | NAVAL SHIPYARD | SAN FRANCISCO, CALIF. | |
| DES. | DRYDOCK NO. 2 | | |
| DRWN. | GENERAL | | |
| TR. | | | |
| CHK. | | | |
| SUPV. | | | |
| DESIGN | APPROVED | DATE | |
| | PUBLIC WORKS OFFICE | 1 Apr 54 | |
| SATISFACTORY TO | SCALE | SPEC | |
| | SHEET | OF | NO. |
| DATE | Y & D DRAWING NO. | | |